

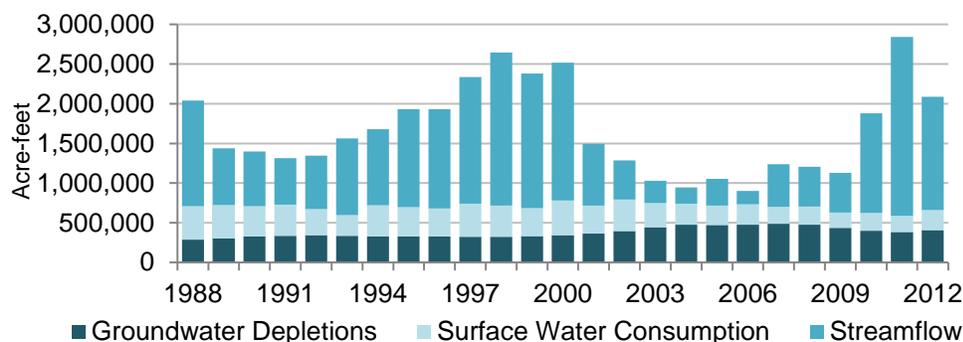
INSIGHT WATER SUPPLY AND WATER DEMAND - DRAFT

KEY ASSUMPTIONS FOR THE UPPER PLATTE RIVER BASIN ABOVE ODESSA¹

OVERALL FINDINGS: The **draft** results of the evaluation indicate that the current volume of water permitted for use is larger than the volume of water supply that is available on an average annual basis within the Upper Platte River Basin.



BASIN WATER SUPPLY: ANNUAL



THE WATER SUPPLIES IN THIS EVALUATION CONSIST OF ESTIMATING THE AMOUNT OF WATER THAT WOULD BE IN THE RIVER BEFORE ANY IS TAKEN OUT.

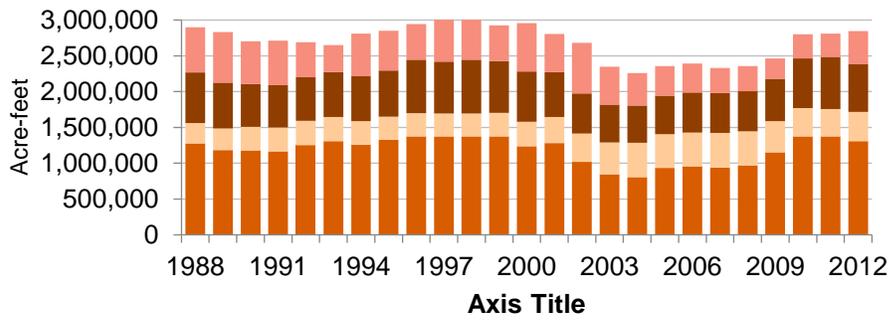
THE TOTAL WATER SUPPLY IS DETERMINED BY ADDING TOGETHER THE FOLLOWING COMPONENTS:

- **GROUNDWATER DEPLETIONS** represent the estimate of water removed from streamflow due to groundwater pumping in the hydrologically connected area.
- **SURFACE WATER CONSUMPTIVE USE** for irrigation was estimated from crop irrigation demands and the acreage served by surface water within each irrigation district.
 - Evaporation from major reservoirs was determined using weather station and pan evaporation data. Reservoirs considered were Lake McConaughy, Lake Maloney, and Elwood, Jeffery, and Johnson Reservoirs.
 - **STREAMFLOW** is the gaged or measured streamflow at the Platte River at Odessa gage. The supply varies through time - naturally occurring wet and dry periods are reflected in the streamflow component.

SUPPLY SUMMARY: The estimated total basin water supply ranges from about 1 million acre-feet during drier periods to over 2.5 million acre-feet during wet periods.

¹ This is a brief summary of the **DRAFT** information presented at the Platte Basin Single Planning Group meeting on March 15, 2017. This information and the results of the evaluation are **draft at this time and subject to change following further review.**

TOTAL DEMAND: ANNUAL (NEAR-TERM)



THE WATER DEMANDS IN THE EVALUATION CONSIST OF ALL CONSUMPTIVE AND NON-CONSUMPTIVE WATER USES WITHIN THE BASIN.

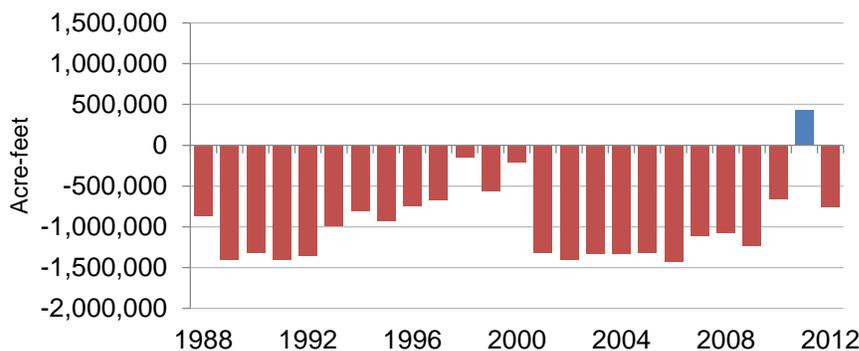
- Total Non-Consumptive
- Groundwater Depletions
- Net Surface Water Loss
- Total Surface Water

THE TOTAL WATER DEMAND IS DETERMINED BY ADDING TOGETHER THE FOLLOWING COMPONENTS:

- **NON-CONSUMPTIVE DEMANDS** represent uses that require water to remain in the stream. The three types that exist in the Upper Platte above Odessa are hydropower, instream flows for fish and wildlife, and downstream demands for the Platte Basin below Odessa.
- **GROUNDWATER DEPLETIONS** include demands for irrigation and municipal needs and represent the estimate of water removed from streamflow due to groundwater pumping in the hydrologically connected area.
- The demands for **NET SURFACE WATER LOSS** represent seepage loss to the aquifer during transport of surface water through canal systems and losses at the field for surface water irrigated lands.
- **SURFACE WATER DEMANDS** include those for irrigation and evaporation.

DEMAND SUMMARY: The total consumptive demands to meet all municipal demands and irrigation demands averages approximately 1.5 million acre-feet. An additional approximately 1 million acre-feet is necessary to meet all non-consumptive demands.

BALANCE: ANNUAL



BALANCE SUMMARY: The average annual supply is typically insufficient to meet all demands. The average deficit is approximately 1 million acre-feet per year.